

## INDEX

NAMES OF CONTRIBUTORS ARE PRINTED IN SMALL CAPITALS

- Age, Mean, at Marriage of Men and Women, Variation and Correlation, J. ARTHUR HARRIS and ROXANA H. VIVIAN, 635
- Alfalfa Breeding, Physiological Correlations and Climatic Reactions in, GEO. F. FREEMAN, 356
- Allelomorphism, Multiole, W. E. CASTLE, 383
- Allelomorphs, Multiple, in Mice, T. H. MORGAN, 449; and Close Linkage, The Theoretical Distinction between, T. H. MORGAN, 502; W. E. CASTLE, 503
- ALLEN, GLOVER M., Pattern Development in Mammals and Birds, 385, 467, 550
- Analysis of a Case of Continuous Variation in *Drosophila* by a Study of its Linkage Relations, JOHN S. DEXTER, 712
- Animals, and Plants, Sessile and Motile, Comparison of Responses of, VICTOR E. SHELFORD, 641
- Ants, Gynandromorphous, described during the Decade 1903-1913, WILLIAM MORTON WHEELER, 49
- Apple, A Study of Variation in the, W. J. YOUNG, 595
- Apterous *Drosophila* and its Genetic Behavior, CHARLES W. METZ, 675
- Arachnoidea, The Origin of *X. Capsella Bursa-pastoris*, HENRI HUS, 193
- BABCOCK, H. L., The Meadow Jumping Mouse (*Zapus Hudsonius*) especially regarding Hibernation, 485
- Behavior, Genetic, An Apterous *Drosophila* and its, CHARLES W. METZ, 675
- BESSEY, CHARLES E., A Study of Desert Vegetation, 639
- Biology of the Thysanoptera, A. FRANKLIN SHULL, 161, 236
- Biometrics, RAYMOND PEARL, 505
- Birds, and Mammals, Barriers to Distribution, JOSEPH GRINNELL, 248; Pattern Development in, GLOVER M. ALLEN, 385, 467, 550
- Breeding, Experiments with Grasshoppers, Nabours's, JOHN S. DEXTER, 317; Alfalfa, Physiological Correlations and Climatic Reactions in, GEO. F. FREEMAN, 356
- BRIDGES, CALVIN B., The Chromosome Hypothesis of Linkage applied to Cases in Sweet Peas and *Primula*, 524
- Bristles, Heredity of, in the Common Green-bottle Fly, PHINEAS W. WHITING, 339
- British Islands, The Endemic Mammals of the, T. D. A. COCKERELL, 177
- Calf, Double-headed, The Osteology of, A. M. REESE, 701
- Capsella Bursa-pastoris arachnoidea*, The Origin of *X*, HENRI HUS, 193
- CASE, E. C., Restoration of *Edaphosaurus cruciger* Cope, 117
- CASTLE, W. E., Some New Varieties of Rats and Guinea-pigs and their relation to Problems of Color Inheritance, 65; Yellow Varieties of Rats, 254; Nabours's Grasshoppers, Multiple Allelomorphism, Linkage and Misleading Terminologies in Genetics, 383; The Theoretical Distinction between Multiple Allelomorphs and Close Linkage, 503
- Castle and Phillips on the Variability of Genes, The Bearing of the Selection Experiments of, HERMANN J. MULLER, 567
- CHANDLER, ASA C., The Effect of Extent of Distribution on Speciation, 129
- Chromosome Hypothesis of Linkage applied to Cases in Sweet Peas and *Primula*, CALVIN B. BRIDGES, 524
- Citrus, Hybrids, Swingle on Variation in  $F_1$ , and the Theory of Zygotaxis, ORLAND E. WHITE, 185; Dr. Swingle's Experiments with, another Hypothesis to account for, A. C. and A. L. HAGEDOORN, 446
- Climatic Reactions in Alfalfa Breeding, GEO. F. FREEMAN, 356
- COCKERELL, T. D. A., The Endemic Mammals of the British Islands, 177

- COLLINS, G. N. and J. H. KEMPTON, Inheritance of Endosperm Texture in Sweet  $\times$  Waxy Hybrids of Maize, 584
- Color Inheritance, Some New Varieties of Rats and Guinea-pigs, and their Relation to Problems of, W. E. CASTLE, 65
- COOK, O. F., Terms relating to Generic Types, 308
- Correlation, and Variation in the Mean Age at Marriage of Men and Women, J. ARTHUR HARRIS and ROXANA H. VIVIAN, 635
- Correlations, Physiological, and Climatic Reactions in Alfalfa Breeding, GEO. F. FREEMAN, 356
- Correspondence and Shorter Articles, 57, 122, 177, 248, 308, 383, 446, 491, 567, 635, 693, 759
- DAVIS, BRADLEY MOORE, Stomps's *Oenothera biennis* L., 498
- Desert Vegetation, A Study of, CHARLES E. BESSEY, 639
- DEXTER, JOHN S., Nabours's Breeding Experiments with Grasshoppers, 317; The Analysis of a Case of Continuous Variation in *Drosophila* by a Study of its Linkage Relations, 712
- Differential Mortality with Respect to Seed Weight occurring in Field Cultures of *Pisum sativum*, J. ARTHUR HARRIS, 83
- Discontinuity in Variation, Galton and, R. RUGGLES GATES, 697
- Distribution, The Effect of Extent of, on Speciation, ASA C. CHANDLER, 129; Barriers to, as regards Birds and Mammals, JOSEPH GRINNELL, 248; A Study of Factors governing, PHINEAS E. WHITING, 339
- "Dominant" and "Recessive?" Spotting in Mice, C. C. LITTLE, 74
- Drosophila*, The Reduplication Hypothesis as applied to, A. H. STURTEVANT, 535; An Apterous, CHARLES W. METZ, 675; The Failure of Ether to produce Mutations in, T. H. MORGAN, 705; Analysis of a Case of Continuous Variation in, its Linkage Relations, JOHN S. DEXTER, 712
- Duplicate Genes, SEWALL WRIGHT, 638
- EAST, E. M., and H. K. HAYES, A Genetic Analysis of the Changes produced by Selection in Experiments with Tobacco, 5
- Ectoparasites of Mammals, VERNON LYMAN KELLOGG, 257
- Edaphosaurus cruciger Cope, Restoration of, E. C. CASE, 117
- EMERSON, R. A., The Inheritance of a Recurring Somatic Variation in Variegated Ears of Maize, 87
- Endemic Mammals of the British Islands, T. D. A. COCKERELL, 177
- Endosperm Texture in Sweet  $\times$  Waxy Hybrids of Maize, Inheritance of, G. N. COLLINS and J. H. KEMPTON, 584
- Environmental Work, Humidity—a Neglected Factor, FRANK E. LUTZ, 122
- Errors, Probable, A Short-cut in the Computation of Certain, HOWARD B. FROST, 696
- Ether, The Failure of, to produce Mutations in *Drosophila*, T. H. MORGAN, 705
- Evolution, and Taxonomy, X, 369
- FISH, H. D., On the Progressive Increase of Homozygosis Brother  $\times$  Sister Matings, 758
- Fluctuations, Mendelian, G. UDNY YULE, 764
- Fly, the Common Green-bottle, Heredity of Bristles in, PHINEAS W. WHITING, 339
- Formulae for the Results of Inbreeding, H. S. JENNINGS, 693
- FREEMAN, GEO. F., Physiological Correlations and Climatic Reactions in Alfalfa Breeding, 356
- FROST, HOWARD B., A Short-cut in the Computation of Certain Probable Errors, 696
- GATES, R. RUGGLES, Galton and Discontinuity in Variation, 697
- Generic Types, Terms relating to, O. F. COOK, 308
- Genes, The Bearing of the Selection Experiments of Castle and Phillips on the Variability of, HERMANN J. MULLER, 567; Duplicate, SEWALL WRIGHT, 638
- Genetic, Analysis of the Changes produced by Selection in Experiments with Tobacco, E. M. EAST and H. K. HAYES, 5; Behavior of an Apterous *Drosophila*, CHARLES W. METZ, 675
- Genetics, Misleading Terminologies in, W. E. CASTLE, 383
- GEROULD, JOHN H., Species-building by Hybridization and Mutation, 321

- Grasshoppers, Nabours's Breeding Experiments with, JOHN S. DEXTER, 317
- Gregory's Tetraploid Primulas, A New Mode of Segregation in, HERMANN J. MULLER, 503
- GRINNELL, JOSEPH, Barriers to Distribution as regards Birds and Mammals, 248
- Guinea-pigs, and Rats, Some New Varieties and their Relation to Problems of Color Inheritance, W. E. CASTLE, 65
- GULICK, JOHN T., Isolation and Selection allied in Principle, 63
- Gynandromorphous Ants, described during the Decade 1903-1913, WILLIAM MORTON WHEELER, 49
- HAGEDORN, A. C. and A. L., Another Hypothesis to account for Dr. Swingle's Experiments with Citrus, 440
- HAGEDORN, A. L., Repulsion in Mice, 699
- HARRIS, J. ARTHUR, On Differential Mortality with respect to Seed Weight occurring in Field Cultures of *Pisum sativum*, 83; and ROXANA H. VIVIAN, Variation and Correlation in the Mean Age at Marriage of Men and Women, 635
- HAYES, H. K., and E. M. EAST, A Genetic Analysis of the Changes produced by Selection in Experiments with Tobacco, 5
- Heredity, and "The Influence of Monarchs," V. L. K., 255; of Bristles in the Common Green-bottle Fly, PHINEAS W. WHITING, 339
- Hibernation, Notes on the Meadow Jumping Mouse, L. H. BABCOCK, 485
- Homozygosis Brother-Sister Matings, The Progressive Increase of, H. D. FISH, 758
- Humidity—a Neglected Factor in Environmental Work, FRANK E. LUTZ, 122
- HUS, HENRI, The Origin of *X Caprella Bursa-Pastoris* Arachnoidea, 193
- HUTCHESON, T. B., Thirteen Years of Wheat Selection, 459
- Hybridization and Mutation, Species-building by, JOHN H. GEROULD, 321
- Inbreeding, a Mendelian Population, RAYMOND PEARL, 57; Notes on, RAYMOND PEARL, 491; and Relationship Coefficients, RAYMOND PEARL, 513; Formulæ for the Results of, H. S. JENNINGS, 693
- Inheritance, Color, Some New Varieties of Rats and Guinea-pigs and their Relation to Problems of, W. E. CASTLE, 65; of a Recurring Somatic Variation in Variegated Ears of Maize, R. A. EMERSON, 87; Sex-limited and Sex-linked, T. H. MORGAN, 577; of Endosperm Texture in Sweet  $\times$  Waxy Hybrids of Maize, G. N. COLLINS and J. H. KEMPTON, 584
- Internal Relations of Terrestrial Associations, ARTHUR G. VESTAL, 413
- Isolation and Selection allied in Principle, JOHN T. GULICK, 63
- JENNINGS, H. S., Formulæ for the Results of Inbreeding, 693
- K., V. L., Woods on Heredity and "The Influence of Monarchs," 255
- KELLOGG, VERNON LYMAN, Ectoparasites of Mammals, 257
- KEMPTON, J. H. and G. N. COLLINS, Inheritance of Endosperm Texture in Sweet  $\times$  Waxy Hybrids of Maize, 584
- Linkage, in the Silkworm Moth, A. H. STURTEVANT, 315; and Misleading Terminologies in Genetics, W. E. CASTLE, 383; Close, and Multiple Allelomorphs, T. H. MORGAN, 512; W. E. CASTLE, 503; Chromosome Hypothesis of, applied to Cases in Sweet Peas and Primula, CALVIN B. BRIDGES, 524; Relations, Analysis of a Case of Continuous Variation in *Drosophila* by a Study of its, JOHN S. DEXTER, 711
- Literature and Notes, 185, 255, 315, 505, 639, 762
- LITTLE, C. C., "Dominant" and "Recessive" Spotting in Mice, 74
- Lucilia sericata Meig., the Common Green-bottle Fly, Heredity of Bristles in, PHINEAS W. WHITING, 339
- LUTZ, FRANK E., Humidity—a Neglected Factor in Environmental Work, 122
- Maize, The Inheritance of a Recurring Somatic Variation in Variegated Ears of, R. A. EMERSON,

- 87; Inheritance of Endosperm Texture in Sweet  $\times$  Waxy Hybrids of, G. N. COLLINS and J. H. KEMPTON, 584
- Mammals, The Endemic, of the British Islands, T. D. A. COCKERELL, 177; and Birds, Barriers to Distribution, JOSEPH GRINNELL, 248; Ectoparasites of, VERNON LYMAN KELLOGG, 257; and Birds, Pattern Development in, GLOVER M. ALLEN, 385, 467, 550
- Marriage of Men and Women, Variation and Correlation in the Mean Age at, J. ARTHUR HARRIS and ROXANA H. VIVIAN, 635
- Matings, Homozygosis Brother  $\times$  Sister, The Progressive Increase of, H. D. FISH, 759
- Meadow Jumping Mouse (*Zapus Hudsonius*) especially regarding Hibernation, H. L. BABCOCK, 485
- Mendelian, Population, On the Results of inbreeding a, RAYMOND PEARL, 57; Fluctuations, G. U'DNY YULE, 762
- METZ, CHARLES W., An Apterous *Drosophila* and its Genetic Behavior, 675
- Mice, "Dominant" and "Recessive," Spotting in, C. C. LITTLE, 74; Multiple Allelomorphs in, T. H. MORGAN, 449; Repulsion in, A. L. HAGEDOORN, 699
- "Monarchs, The Influence of," and Heredity, V. L. K., 255
- MORGAN, T. H., Multiple Allelomorphs in Mice, 449; The Theoretical Distinction between Multiple Allelomorphs and Close Linkage, 502; Sex-limited and Sex-linked Inheritance, 577; The Failure of Ether to produce Mutations in, 705
- Mortality, Differential, with respect to Seed Weight occurring in Field Cultures of *Pisum sativum*, J. ARTHUR HARRIS, 83
- Moth, Silkworm, Linkage in the, A. H. STURTEVANT, 315
- Motile and Sessile Plants and Animals, A comparison of the Responses of, VICTOR E. SHELFORD, 641
- Mouse, Meadow Jumping (*Zapus Hudsonius*), especially regarding Hibernation, H. L. BABCOCK, 485
- MULLER, HERMANN J., A New Mode of Segregation in Gregory's Tetraploid Primulas, 508; The Bearing of the Selection Experiments of Castle and Phillips on the Variability of Genes, 567
- Multiple, Allelomorphism, W. E. CASTLE, 383; Allelomorphs in Mice, T. H. MORGAN, 449; Allelomorphs and Close Linkage, T. H. MORGAN, 502; W. E. CASTLE, 503
- Mutation, and Hybridization, Species-building by, JOHN H. GEROULD, 321
- Mutations, Parallel, in *Enothera biennis* L., THEO. J. STOMPS, 494; BRADLEY M. DAVIS, 498; in *Drosophila*, The Failure of Ether to Produce, T. H. MORGAN, 705
- Nabours's, Breeding Experiments with Grasshoppers, JOHN S. DEXTER, 317; Grasshoppers, W. E. CASTLE, 383
- Notes and Literature, 185, 255, 315, 505, 639, 762
- Enothera biennis* L., Parallel Mutations in, THEO. J. STOMPS, 494; BRADLEY M. DAVIS, 498
- Osteology of a Double-headed Calf, A. M. REESE, 701
- Pattern Development in Mammals and Birds, GLOVER M. ALLEN, 385, 467, 550
- PEARL, RAYMOND, On the Results of Inbreeding a Mendelian Population, 57; Studies on Inbreeding, 491; Biometrics. 505: Inbreeding and Relationship Coefficients, 513
- Phillips, and Castle, The Bearing of Selection Experiments on the Variability of Genes, HERMANN J. MULLER, 567
- Physiological Correlations and Climatic Reactions in Alfalfa Breeding, GEO. F. FREEMAN, 356
- Pisum sativum*, Differential Mortality with Respect to Seed Weight occurring in Field Cultures of, J. ARTHUR HARRIS, 83
- Plants and Animals, Sessile and Motile, A Comparison of the Responses of, VICTOR E. SHELFORD, 641
- Primulas, Tetraploid, Gregory's, A New Mode of Segregation in, HERMANN J. MULLER, 508
- Rats and Guinea-pigs, Some New Varieties of, and their relation to Problems of Color Inheritance, W. E. CASTLE, 65; Yellow Varieties of, W. E. CASTLE, 254
- "Recessive," and "Dominant,"

- Spotting in Mice, C. C. LITTLE, 74
- Reduplication Hypothesis as applied to *Drosophila*, A. H. STURTEVANT, 535
- REESE, A. M., The Osteology of a Double-headed Calf, 701
- Regeneration, Variation and Correlation in *Thyone*, JOHN W. SCOTT, 280
- Repulsion in Mice, A. L. HAGEDOORN, 699
- Responses of Plants and Animals, Sessile and Motile, A Comparison of the, VICTOR E. SHELFORD, 641
- Restoration of *Edaphosaurus cruriger* Cope, E. C. CASE, 117
- SCOTT, JOHN W., Regeneration, Variation and Correlation in *Thyone*, 280
- Seed Weight occurring in Field Cultures of *Pisum sativum*, Differential Mortality with Respect to, J. ARTHUR HARRIS, 83
- Segregation, A New Mode of, in Gregory's Tetraploid Primulas, HERMANN J. MULLER, 508
- Selection, in Experiments with Tobacco, Genetic Analysis of the Changes, E. M. EAST and H. K. HAYES, 5; and Isolation, allied in Principle, JOHN T. GULICK, 63; Wheat, Thirteen Years of, T. B. HUTCHESON, 459; Experiments of Castle and Phillips, bearing on the Variability of Genes, HERMANN J. MULLER, 567
- Sessile and Motile Plants and Animals, A Comparison of the Responses of, VICTOR E. SHELFORD, 641
- Sex-limited and Sex-linked Inheritance, T. H. MORGAN, 577
- SHELFORD, VICTOR E., A Comparison of the Responses of Sessile and Motile Plants and Animals, 641
- Short-cut in the Computation of Certain Probable Errors, HOWARD B. FROST, 696
- Shorter Articles and Correspondence, 57, 122, 177, 248, 308, 383, 446, 491, 567, 635, 693, 759
- SHULL, A. FRANKLIN, Biology of the Thysanoptera, 161, 236
- Silkworm Moth, Linkage in the, A. H. STURTEVANT, 315
- Speciation, The Effect of Extent of Distribution on, ASA C. CHANDLER, 129
- Species-building by Hybridization and Mutation, JOHN H. GEROULD, 321
- Spotting in Mice, "Dominant" and "Recessive," C. C. LITTLE, 74
- STOMPS, THEO. J., Parallel Mutations in *Enothera biennis* L., 494
- Stomps's *Enothera biennis* L., BRADLEY M. DAVIS, 498-
- STURTEVANT, A. H., Linkage in the Silkworm Moth, 315; The Reduplication Hypothesis as applied to *Drosophila*, 535
- Sweet Peas and Primula, Chromosome Hypothesis of Linkage applied to Cases in, CALVIN B. BRIDGES, 524
- Swingle on Variation in *F<sub>1</sub>* Citrus Hybrids and the Theory of Zygotaxis, ORLAND E. WHITE, 185
- Swingle's Experiments with Citrus, Another Hypothesis to account for, A. C. and A. L. HAGEDOORN, 446
- Taxonomy and Evolution, X, 369
- Terrestrial Associations, Internal Relations of, ARTHUR G. VESTAL, 413
- Thyone*, Regeneration, Variation and Correlation in, JOHN W. SCOTT, 280
- Thysanoptera, Biology of the, A. FRANKLIN SHULL, 161, 236
- Tobacco, A Genetic Analysis of the Changes produced by Selection in Experiments with, E. M. EAST and H. K. HAYES, 5
- Types, Generic, Terms relating to, O. F. COOK, 308
- Variability of Genes, The Bearing of the Selection Experiments of Castle and Phillips on the, HERMANN J. MULLER, 567
- Variation, in Variegated Ears of Maize, The Inheritance of a Recurring Somatic, R. A. EMERSON, 87; in *F<sub>1</sub>* Citrus Hybrids and the Theory of Zygotaxis, Swingle on, ORLAND E. WHITE, 185; Regeneration and Correlation in *Thyone*, JOHN W. SCOTT, 280; in the Apple, W. J. YOUNG, 595; and Correlation in the Mean Age at Marriage of Men and Women, J. ARTHUR HARRIS and ROXANA H. VIVIAN, 635; Galton and Discontinuity in, R. RUGGLES GATES, 697; Continuous, Analysis of a Case in *Drosophila* by a Study of

- its Linkage Relations, JOHN S. DEXTER, 712
- Vegetation, Desert, CHARLES E. BESSEY, 639
- VESTAL, ARTHUR G., Internal Relations of Terrestrial Associations, 413
- VIVIAN, ROXANA H., and J. ARTHUR HARRIS, Variation and Correlation in the Mean Age at Marriage of Men and Women, 635
- Wheat Selection, Thirteen Years of, T. B. HUTCHESON, 459
- WHEELER, WILLIAM MORTON, Gynandromorphous Ants described during the Decade 1903-1913, 49
- WHITE, ORLAND E., Swingle on Variation in  $F_1$  Citrus Hybrids and the Theory of Zygotaxis, 185
- WHITING, PHINEAS W., Heredity of Bristles in the Common Green-bottle Fly. Study of Factors Governing Distribution, 339
- Woods on Heredity and the "Influence of Monarchs," V. L. K., 255
- WRIGHT, SEWALL, Duplicate Genes, 638
- X, Taxonomy and Evolution, 369
- X *Capsella Bursa-pastoris* arachnoidea, The Origin of, HENRI HUS, 193
- Yellow Varieties of Rats, W. E. CASTLE, 254
- YOUNG, W. J., A Study of Variation in the Apple, 595
- Zygotaxis, Swingle on Variation in  $F_1$  Citrus Hybrids and the Theory of, ORLAND E. WHITE, 185

